



Depression, Anxiety and Stress Scale (DASS-21): Score vs Severity

	Depression	Anxiety	Stress
Normal	0 - 9	0 - 7	0 - 14
Mild	10 - 13	8 - 9	15 - 18
Moderate	12 - 20	10 - 14	19 - 25
Severe	21 - 27	15 - 19	26 - 33
Extremely Severe	28+	20+	34+



IMPROVING THE PERCENTAGE OF STUDENTS RECEIVING THEIR PSYCHOLOGY STATUS EARLY

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INTRODUCTION

The **current practice** in the ILKKM setting is that only **students referred** to the counselling unit are being **assessed manually for mental state periodically** by the counsellor, which is time-consuming, burdensome, and **delayed in producing results—causing** delay in students getting their slots for therapy.

According to Fauzi et al. (2021), the prevalence of anxiety, stress and depression among health science students is 66 to 74 %.

Timely detection and management of mental health disorders among students are essential to safeguard public health.

1. SELECTION OF OPPORTUNITIES FOR IMPROVEMENT

Effectiveness

Delay in providing service for the needy students based on their psychological status

Efficiency

A low percentage of compiling student's psychological level using the manual DASS-21 early

Timeliness

Long-waiting time (32 days) for psychological status causing uncertainty among students

Safety

Possibility of students feeling unsafe because of their unknown mental health status.

Student centered / acceptable

A high percentage of students received their psychological status late.

5W 1H

Method

How does it happen?

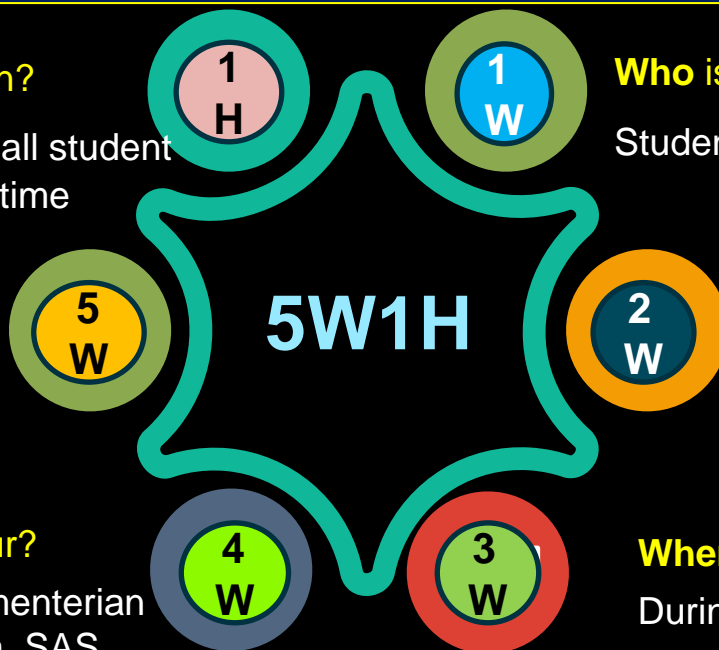
The task to assess all student in a short period of time

What is the actual problem?

Notification of psychological assessment of 484 students delayed to 32 days.

Where does it occur?

Institut Latihan Kementerian Kesihatan Malaysia, SAS



Who is affected?

Students of Allied Health Science

Why does the problem happen?

Lack of manpower, do not have simplified method to assess student

When does it happen?

During academic phase

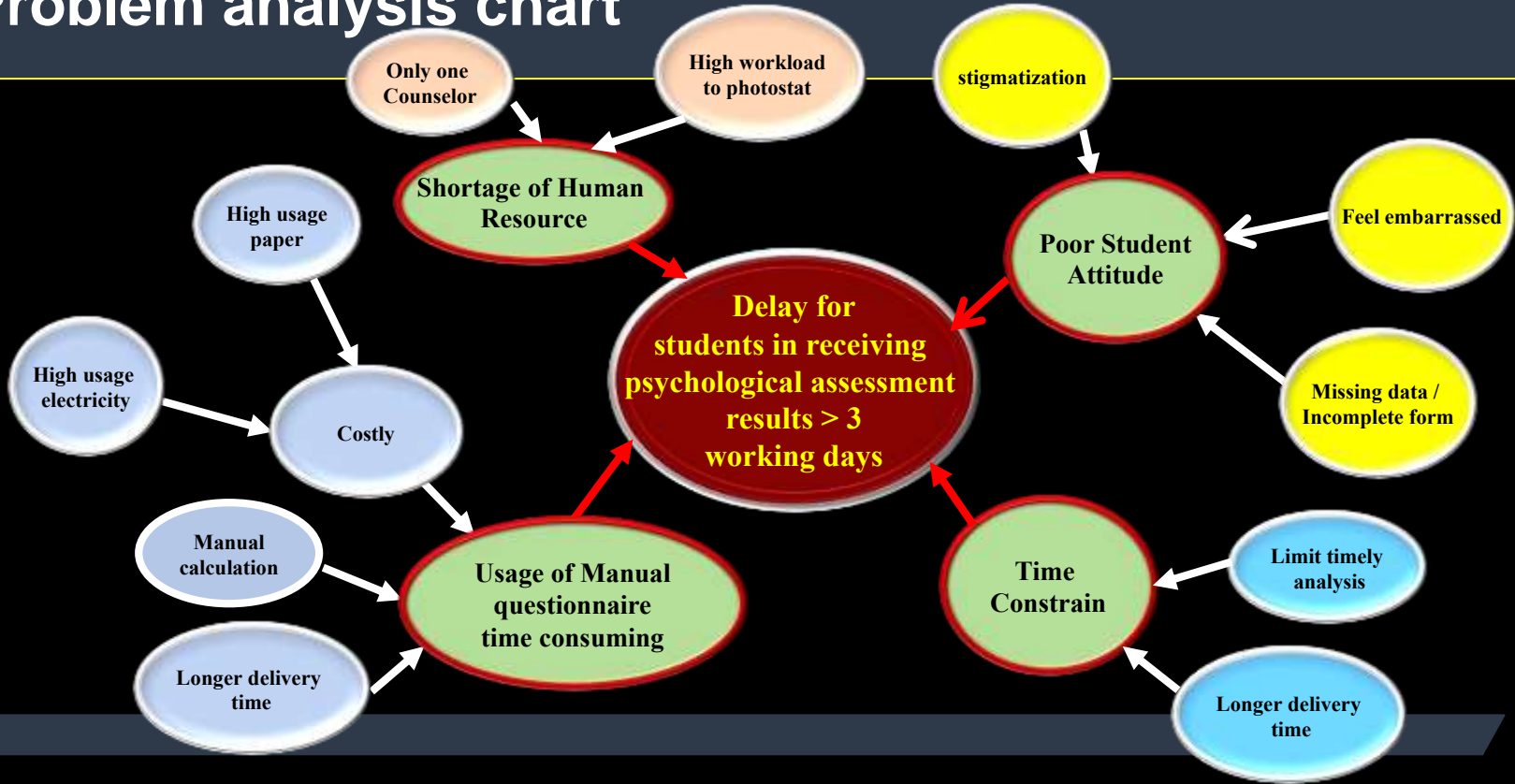
BRIEF DESCRIPTION OF CONTEXT

Training can become stressful because student's first experience with a patient, thus require a continuous assessment of mental health throughout their training period (Beiter et al., 2015).

Problem chosen based on S.M.A.R.T. approach

Proposed topic	Serious or specific	Measurable	Appropriate	Relevant / remediable	Timely	Total
1. A high percentage of students received their psychological status more than 1 working day	18	18	18	18	18	108
2. Delay in providing service for the needy students based on their psychological status	18	18	15	15	15	81
3. A low percentage of compiling student's psychological level using the manual questionnaire (DASS-21) early	15	12	15	15	15	72
4. Long-waiting time (32 days) for psychological status causing uncertainty among students	18	15	15	15	15	78
5. Possibility of students feeling unsafe because of their unknown mental health status.	15	12	15	15	15	72

Problem analysis chart



Causes of delay in Delivering the psychological status	Frequency, n	Percentage	Cumulative frequency	Cumulative Percentage
Usage of manual questionnaire	230	46%	230	46%
Time constraint	170	34%	400	80%
Access problem for students	70	14%	470	94%
Shortage of human resource	30	6%	500	100%

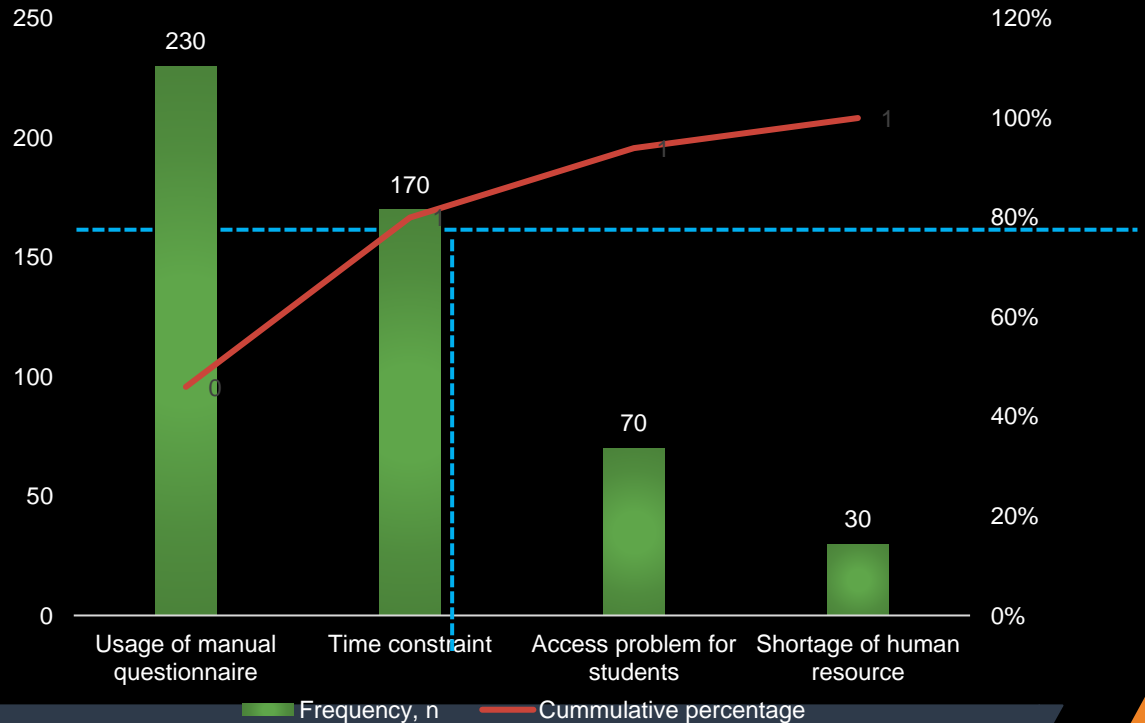


Figure 1 : Pareto Chart – Causes of delay in delivering the psychological status

Causes of delay in Delivering the psychological status	Frequency, n	Percentage	Cumulative frequency	Cumulative Percentage
Manual calculation	130	26%	130	26%
Longer delivery time	120	24%	250	50%
High cost - paper	90	18%	340	68%
High cost - photostat	80	16%	420	84%
Missing data	60	12%	480	96%
Student attitude	10	2%	490	98%
Staff issue	10	2%	500	100%

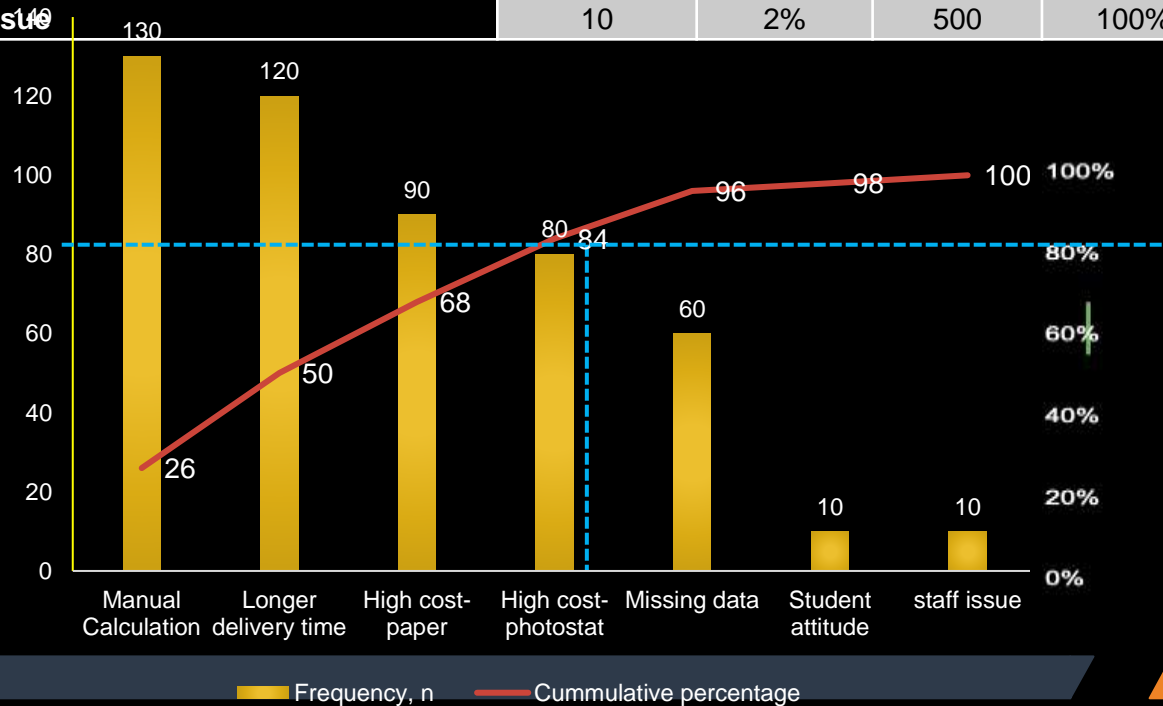


Figure 2 : Pareto Chart – Causes of delay in delivering the psychological status

Problem statement

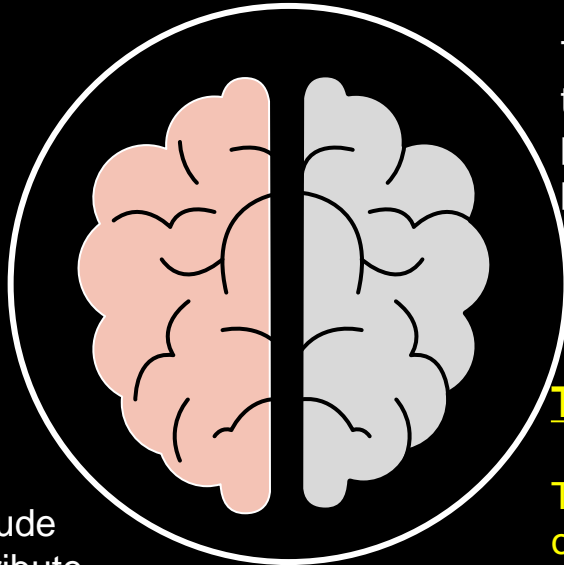
Problem

A manual psychological assessment consists of 3 sub-scale-depression, anxiety & stress, conducted from

April– May 2021 (500 students in ILKKMSAS) revealed 96.8% of Students received their psychological assessment done >3 working days

Cause

Multiple factors including manpower, information system collaboration, attitude and current working culture may contribute to this problem.



Effects

The intervention delay will affect student's therapy plan, deterioration of student's psychological status, affecting academic performance from the study.

The aim of the study

This study aims to improve the percentage of students receiving the psychological assessment early by the counsellor.

General objective

The main objective is to **improve the percentage** of students receiving the psychological assessment **early**

Specific objective

1. To verify **the percentage** of students who receives their **psychological status more than three working days**.

Specific objective

2. To identify the **contributing factors** to the **delay of students receiving** their psychological assessment results.

Specific objective

3. To **formulate and implement the transformation approach** in student's psychological status early.

Specific objective

4. To **evaluate the effectiveness of the transformation** in assessing student's psychological status early.

Definition of terms

Students

The students enroll for a 3-year programme at the College of Allied Health Sciences Sultan Azlan Shah.

The basic programmes are Diploma of nursing, Diploma of Medical Assistant, Diploma of Pharmacy and Certificate of Public Health.



Receiving their psychological status

Psychological status comprising depression, anxiety and stress in a 3-piece assessment. The DASS-21 is adapted from Lovibond & Lovibond (1995)



Early –

1 working day



Background – Evidence to support choice of the measures

(Ramli et al., 2012; Musa & Maskat, 2020).

Evaluation of the psychometric properties in **Bahasa Malaysia** DASS-21 among non-Malaysia in Malaysia revealed good **reliability** and **validity**, implying the scales can be used in a multi-ethnic population in Malaysia.



A cross-sectional study - UiTM Puncak Alam, Malaysia, 478 (Medical Lab Sciences, Medical Imaging, Nursing) Self-administered DASS-21 questionnaires - students to be **filled up within 20 minutes**

(Fauzi et al., 2021)



2. KEY MEASURES FOR IMPROVEMENT

1. Specificity
-Screen based questionnaire
-auto-generated results in
3 mins

2. Comprehensiveness

Comprehensive tracking last-
assessment

3. Reliability

Constant Authorized
personnel

4. Validity

Ensure back-up every 6
months to prevent crashing

5. Feasible to get data

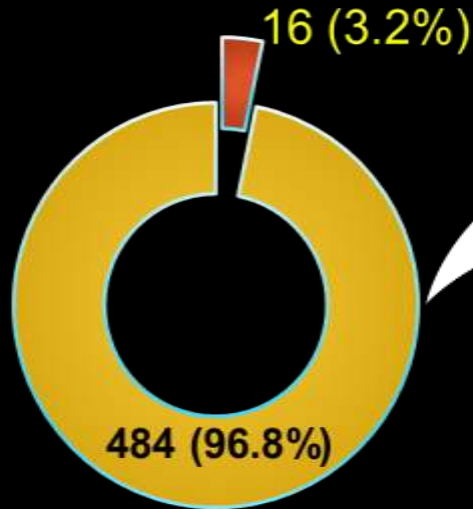
Centralised data securely
Protective



6. Acceptable

User-friendly
Applicable to all
students & staff

**Good indicators
required for the
improvement for Web-
based DASS-21**

Percentage of students receiving their psychological assessment



-  1 working day
-  More than 1 working day



16 students = 1 working day
500 students = 32 working days

INDICATOR AND STANDARD

INDICATOR	All students in a semester should receive their psychological assessment (PA) within 1 working day by a counsellor.
FORMULA	$\frac{\text{The number of students per semester who receive PA (1 working day)}}{\text{All students per semester should receive their PA in working day}} \times 100$
STANDARD	The standard for the indicator is at least 90% based on Quality Assurance Project Team consensus.

3. PROCESS OF GATHERING INFORMATION

Study design
Study setting
Population

Sample size &
technique

Time Frame

Instrument

Inclusion &
exclusion criteria

01

- Cross-sectional
ILKKMSAS
Basic students

02

500 students
Universal
sampling

03

5 months
(Mac – July 2021)

04

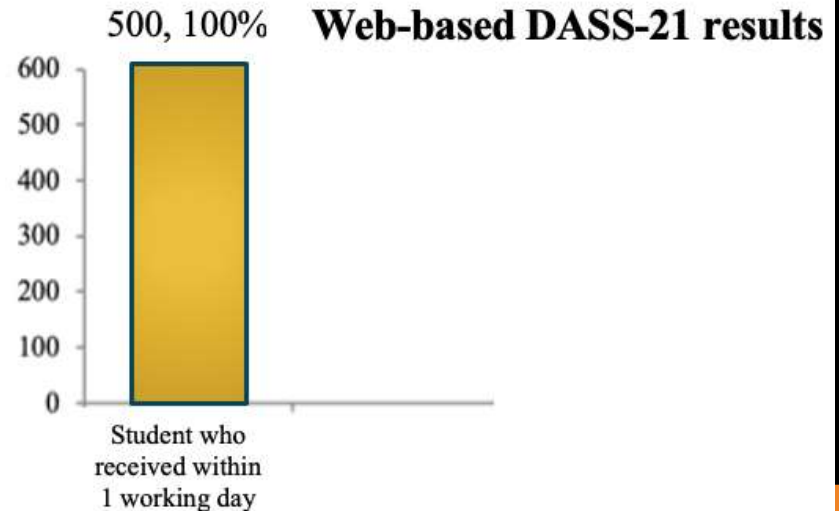
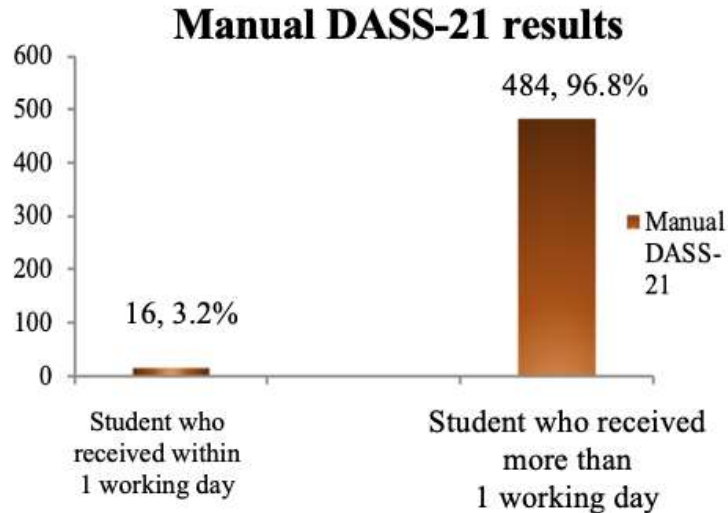
DASS-21 – 21 items
Checklist-Contributing
factors on delay
Checklist-
transformation effect

05

Inclusion: All basic
students (4 courses)
registered
Exclusion: Unwell
during study period

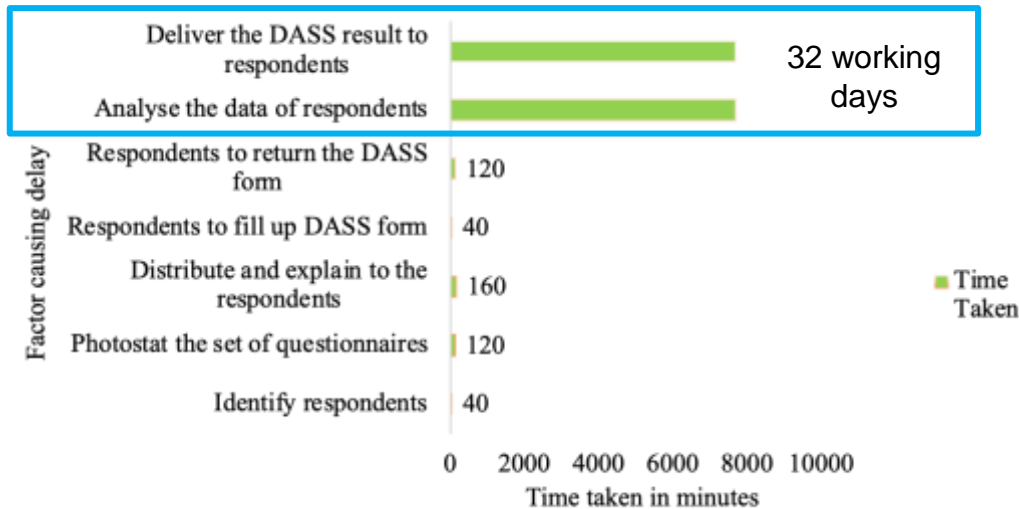
4. ANALYSIS AND INTERPRETATION

Finding: Comparison between percentage of students who receives their psychological status using Manual and Web-based DASS-21 results



4. ANALYSIS AND INTERPRETATION


The contributing factors to the delay of students receiving their psychological assessment results.



4. ANALYSIS AND INTERPRETATION


The implementation of transformation approach obtaining students's psychological status early.

The Quality Assurance project team managed to create a web-based DASS-21



The screenshot shows the login page for the 'Web-Based DASS-21' system. The page has a dark blue header with the title 'Web-Based DASS-21' and a user role indicator 'Pentadbir'. The main content area is white and features the national coat of arms of Malaysia at the top center. Below the coat of arms, the text reads: 'SELAMAT DATANG KE SISTEM WEB-BASED DASS-21 UNIT PSIKOLOGI KAUNSELING, ILKKM SULTAN AZLAN SHAH'. A paragraph of text explains that the system is an application for measuring depression, anxiety, and stress levels, and that it is used as an initial screening tool. At the bottom, there is a dark blue button labeled 'Sertai Ujian DASS'.

Web-Based DASS-21 Pentadbir



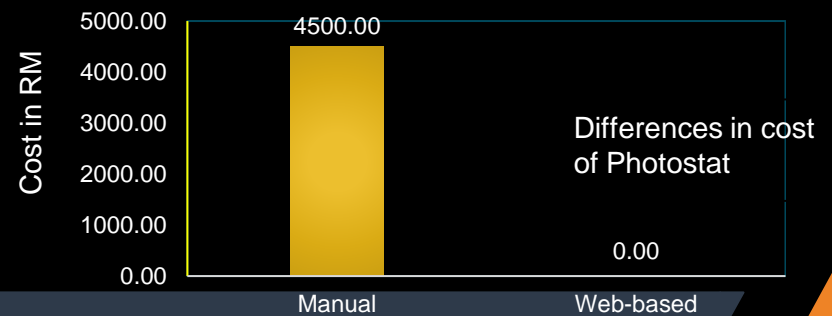
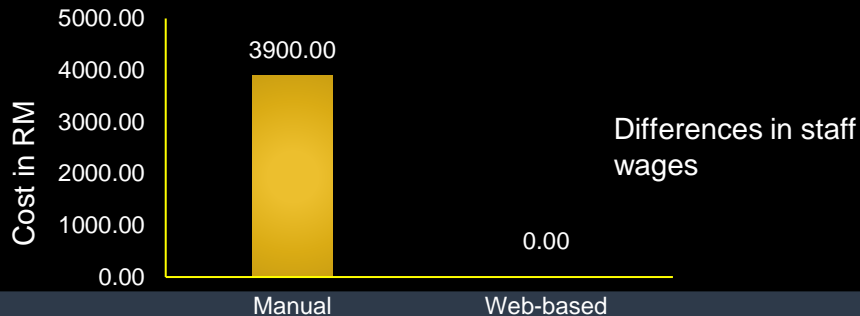
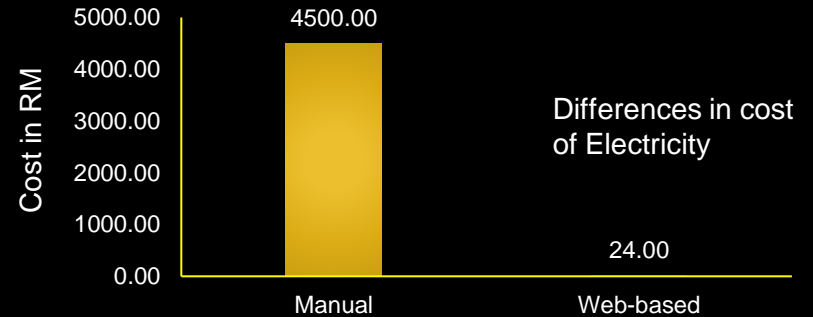
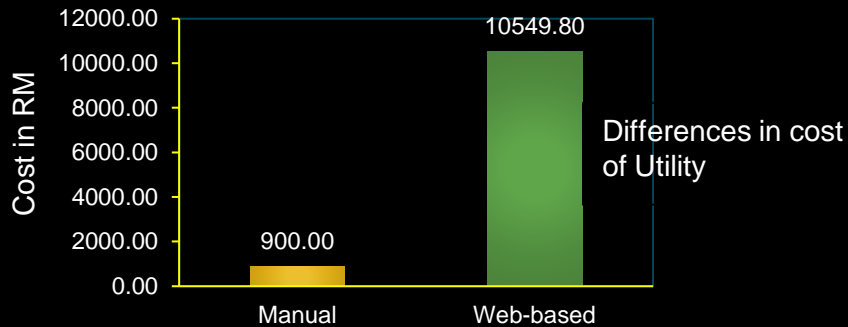
SELAMAT DATANG KE SISTEM WEB-BASED DASS-21 UNIT PSIKOLOGI KAUNSELING, ILKKM SULTAN AZLAN SHAH

Sistem Web-Based DASS-21 merupakan aplikasi untuk mengukur tahap kemurungan (Depression), tahap kebimbangan (Anxiety) dan tahap tekanan (Stress) serta Gaya Daya Tindak. Dengan ujian saringan ini, anda boleh ketahui status kesihatan mental anda dan tahap gaya daya bertindak terhadap masalah kesihatan mental anda. Ujian ini hanya berfungsi sebagai saringan awal dan pengesahan diagnosis oleh pegawai perubatan adalah diperlukan.

[Sertai Ujian DASS](#)

4. ANALYSIS AND INTERPRETATION

The effectiveness of the transformation is assessing student's psychological status early.



Findings

- i. Time taken to obtain a result from the Manual DASS-21 is **32 days**.
- ii. The problem **does not immediately address** the issues of students suffering from stress, anxiety and depression.
- iii. Web-based DASS-21 – result in **1 working day**.
- iv. The counselor could plan the therapy for the students **within 3 working days** and fulfill the key performance index.
- v. Save **operational cost** for 500 student = RM3250.20 period of 5 years

5. STRATEGY FOR CHANGE

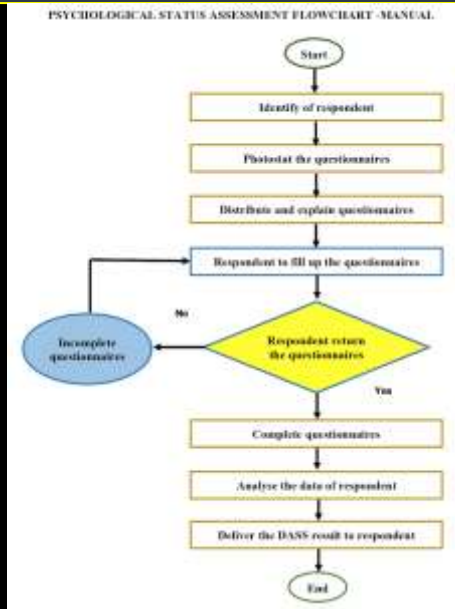


Figure 5.1: Psychological status assessment flowchart – Manual DASS-21

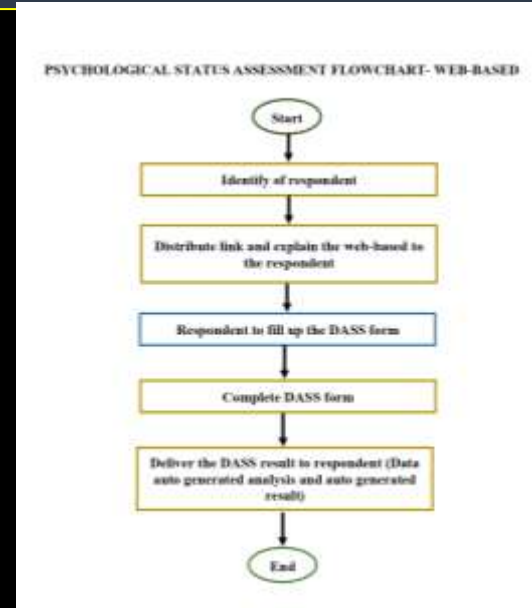


Figure 5.2: Psychological status assessment flowchart – Web-based DASS-21

5. STRATEGY FOR CHANGE

Quality Assurance
Project Team ILKKMSAS

Allied Health
Science Tutors



6. EFFECTS OF CHANGE

The changes or innovation lead to improvement.

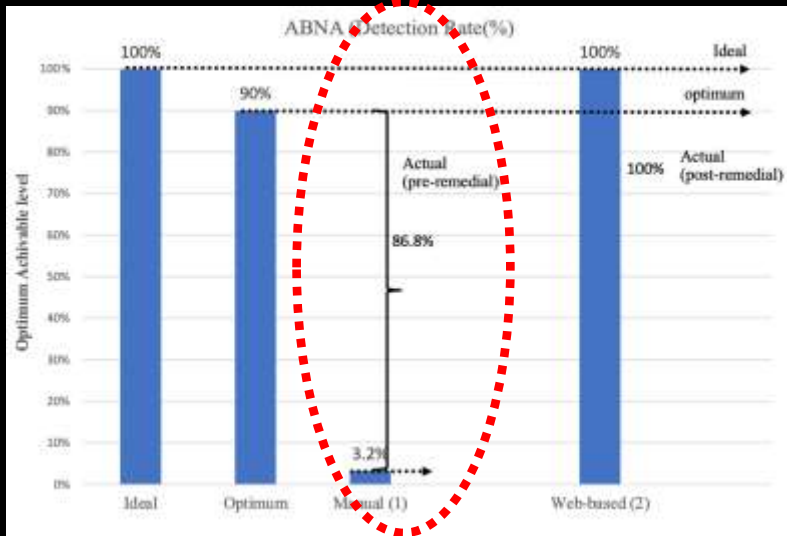


Figure 6 : Illustrates effects of change on ABNA

Percentage increased from 3.2% in phase 1, improved to 100% in phase 2

Achievable benefit not achieved (ABNA) was improved from 86.8% to 100% finally.
 - Reduced the time duration from 32 working days to 1 working day & maintain the higher percentage of student's psychological assessment

6. EFFECTS OF CHANGE

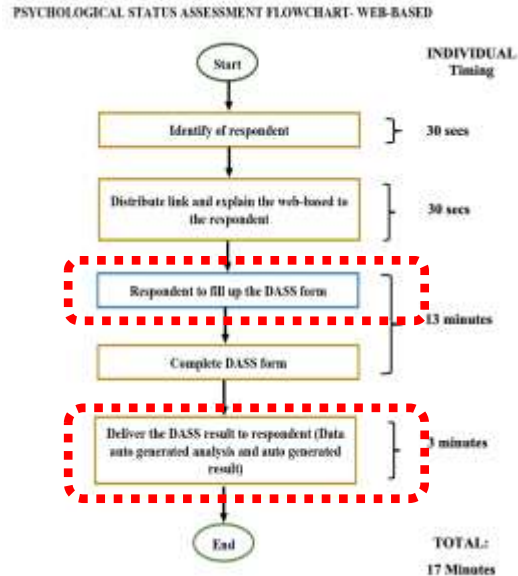
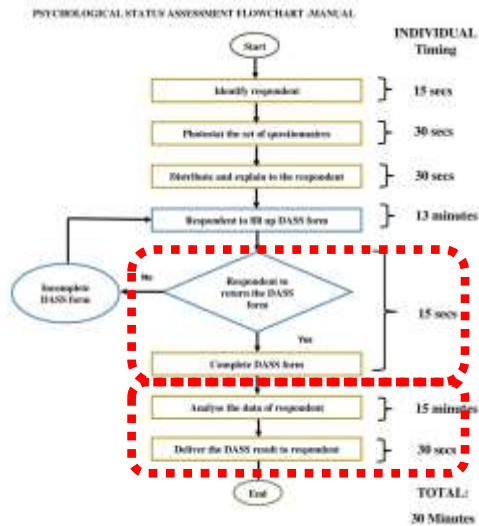
How did you know that the improvement had taken place?



- ✓ The improvement had taken place – helped to reduce operational cost (paper, photostat, electricity)
- ✓ Early assessment - students with optimum mental health
- ✓ Prevent substances abuses, suicidal attempt, drop out
- ✓ Better academic achievement, good patient care

6. EFFECTS OF CHANGE

Shorten time for analyse & delivery of Dass-21 results to respondents



Save Time:
From 32 working days) to 1 working day with an auto-generated results by the web-based system

MODEL OF GOOD CARE

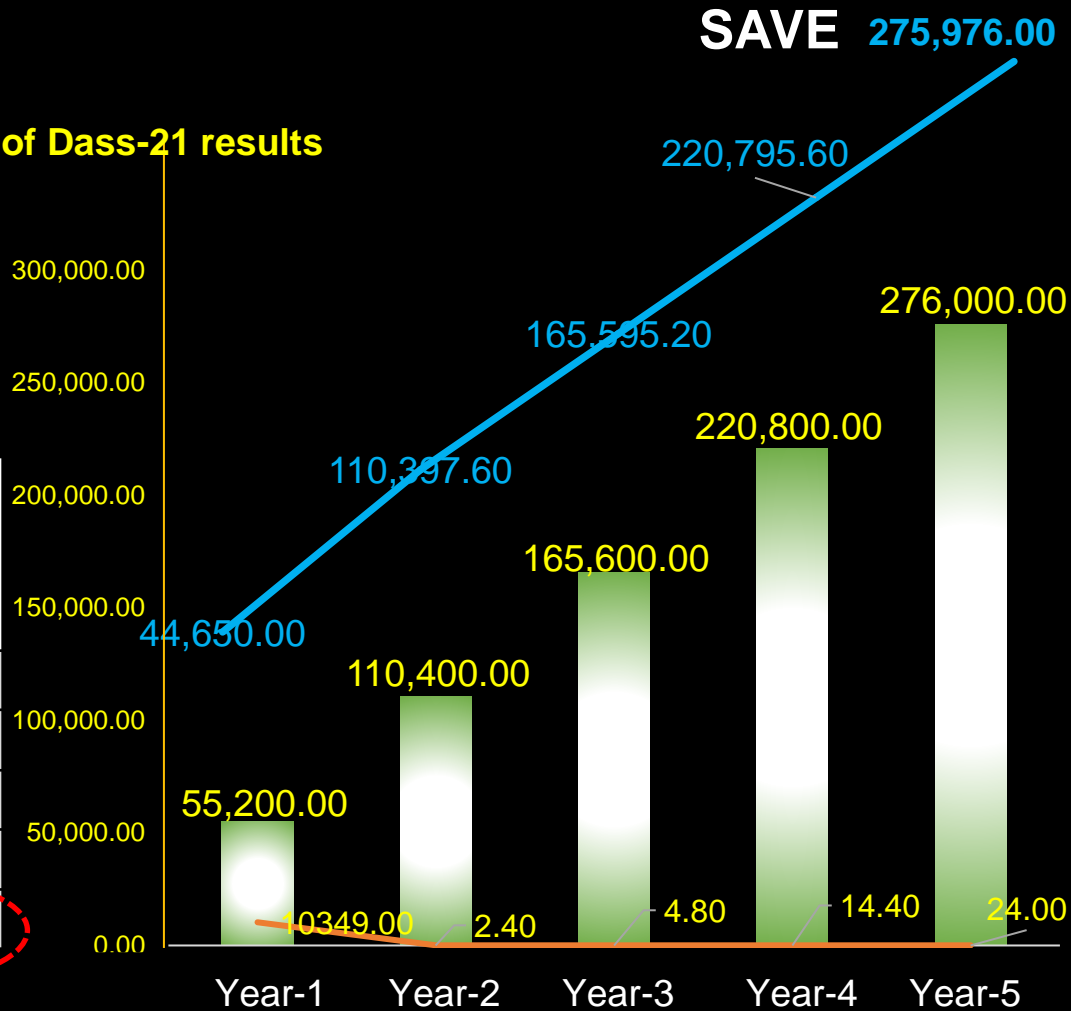
Process	Criteria	Standard		Cycle 1 Pre- Remedial		Cycle 2 Post Remedial	
		%	Time	%	Time	%	Time
Staff make sure Screening tools available	Psychology officer/Course-coordinators must inform students to respond DASS-21	100%	≤ 1 hour	100%	30 min	100%	2 seconds
Psychology officer / Course –coordinators identify the respondents	Ensure the students for psychological assessment were selected and are informed.	100%	15 seconds	100%	10 min	100%	13 seconds
Psychology officer / Course-coordinators prepare DASS-21	Psychology officer / Course-coordinators explain the rules & regulations of using DASS-21	100%	30 seconds	100%	280 min	100%	30 second
Students to fill up DASS form	Psychology officer / Course-coordinators gives gentle reminder	100%	30 minutes	100%	40 minutes	100%	13 minutes
Psychology officer receive the DASS form	Psychology officer checks the result	100%	≤ 3 working days	3.2% 96.8%	1 working day 32 working days	100%	1 working day

6. EFFECTS OF CHANGE

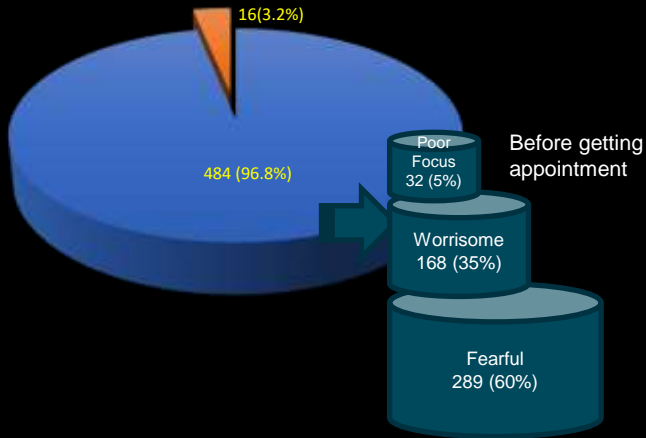
Saving operational cost for analyse & delivery of Dass-21 results

Table 1: Saving of operational cost-the differences between Manual DASS-21 and Web-based DASS-21 for 5 years

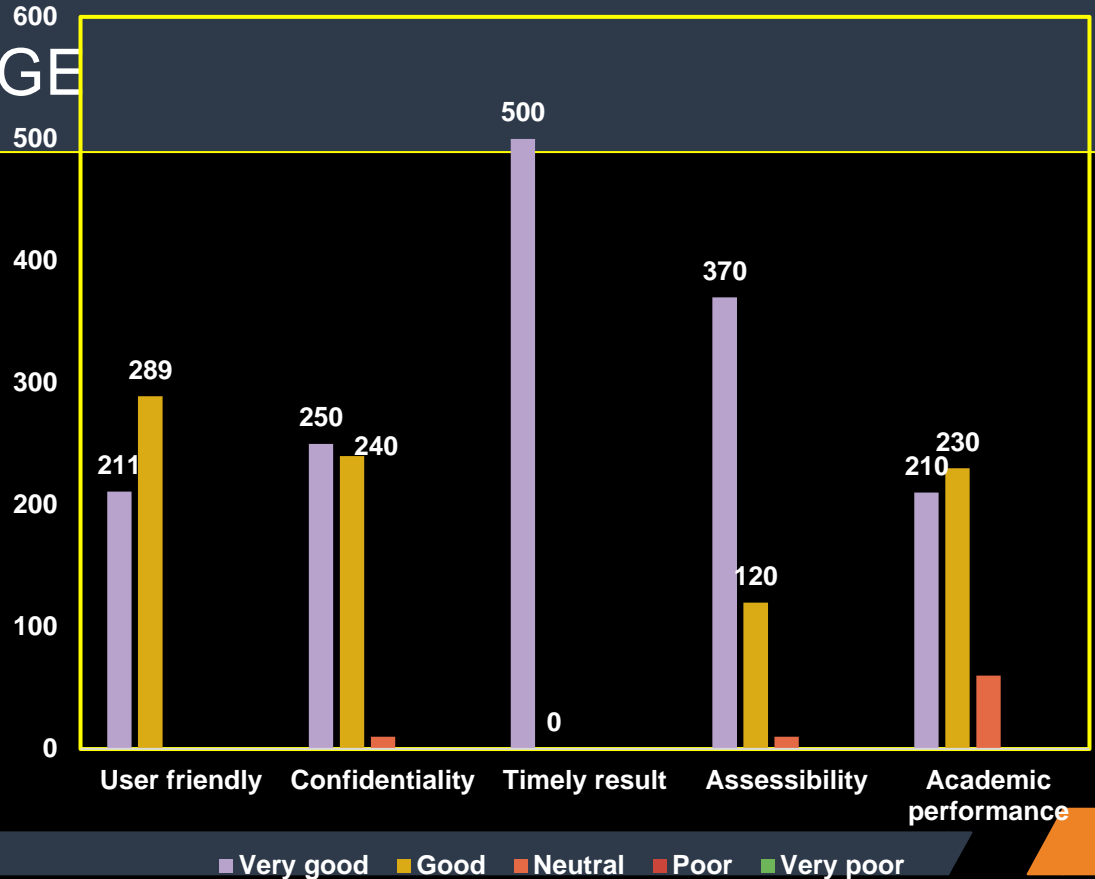
Year	Manual DASS-21 (RM)	Web-based DASS-21 (RM)	Saving (RM)
Year-1	56,200.00	10,549.00	44,650.20
Year-2	110,400.00	2.40	110,397.60
Year-3	165,600.00	4.80	165,595.20
Year-4	220,800.00	14.40	220,785.60
Year-5	276,000.00	24.00	275,976.00



6. EFFECTS OF CHANGE



Pie Chart on cause effect on delay result of psychological status



6. EFFECTS OF CHANGE



Achievement

Web-based DASS-21 innovation clearly shows improvement in standard of student counseling.



Mental health issues are a serious problem that needs to be apprehended early by the Training Management Division, MOH.

Ensure the wellness of the students are in good condition that required to be in a healthy state of mind – health care service in future.

6. EFFECTS OF CHANGE

EFFECTS OF Change

01



Analyze & ranging the severity of psychological status in **3 minutes**

02



Students received their psychological assessment in **3 minutes**

03



Web-based cater for **large group** of students

04



Counselor can plan **early** counselling / therapy & referral

05



Reduce **cost** – wages, paper, photostat, electricity

06



Students' preferred **confidentiality**

7. THE NEXT STEP



The Web-based DASS-21 will be implemented throughout ILKKM in Malaysia

All students enrolled in ILKKM will have to undergo mental state assessment throughout their study period.

The study was presented to the Committee of Quality in Training Management Division in August 2022.



8. VISION, MISSION, OBJECTIVES



VISION:

As leading Institute
for Educational
Excellence in
Healthcare



MISSION:

To produce knowledgeable,
skillfull, competitive and noble
human capital through the
enhancement of learning to
advance healthcare services.



OBJECTIVES:

- Develop highly skilled and competent human capital with the ethical standards.
- Develop intellectual intelligence through the mastery of knowledge.
- Develop individuals' potential holistically.
- Develop balanced and inclusive allied health professionals with spiritual, intellectual, emotional, social and physical qualities.
- Nurture values of lifelong learning and 'evidence based practice' in education.

**VISION, MISSION
AND OBJECTIVES OF ILKMM**

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Acknowledgement

Director of ILKKMSAS

Deputy Director of Academic Affair

Deputy Director of Students Affair

Head of Evaluation and Quality

Head of Programme

Facilitator

Information Technology (IT) Unit

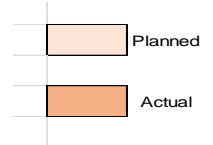
Psychology and Counseling Unit

Pertubuhan Kebajikan Pelatih (PKP)



Gantt chart

GANTT CHART FOR QA/QI PROJECT YEAR 2021										
INSTITUT LATIHAN KEMENTERIAN KESIHATAN MALAYSIA SULTAN AZLAN SHAH, PERAK										
BIL	TIME	PERSON IN-CHARGE	TAHUN 2021							
			MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT
1	COMMITTEE ESTABLISHMENT	DR HAYMALATHA A/P RAJAGAM	Planned							
2	BRAINSTORMING AND PROBLEM SELECTION	ALL TEAM MEMBERS	Actual							
3	VERIFICATION STUDY & PROBLEM ANALYSIS	DR HAYMALATHA A/P RAJAGAM & ALL TEAM MEMBERS	Planned							
4	REMEDIAL ACTION IMPLEMENTATION	ALL TEAM MEMBERS		Planned	Planned					
5	RE-EVALUATION (CYCLE 1)	DR HAYMALATHA A/P RAJAGAM & ALL TEAM MEMBERS			Actual	Actual				
6	DISCUSSION AND REMEDIAL ACTION (CYCLE 2)	ALL TEAM MEMBERS				Planned	Planned	Planned		
7	RE-EVALUATION (CYCLE 2)	DR HAYMALATHA A/P RAJAGAM						Planned	Planned	
8	DISCUSSION/SHARING SESSION/PRESENTATION	ALL TEAM MEMBERS							Planned	Planned



Checklist

ANNEX 7

CHECKLIST : PROCESS OF DASS-21 DATA COLLECTION

Name of institution

Name of counselor

Date of commencing data collection

No.	Process	Period of time (minute/sec)
1	Identify respondent	
2	Photostat the set of questionnaires	
3	Distribute and explain to the respondent	
4	Respondent to fill up DASS form	
5	Respondent to return the DASS form	
6	Analyse the data of respondent	
7	Deliver the DASS result to the respondent	

Commenced by:

.....

Signature:

()

Checklist

DASS21 Name: _____ Date: _____

Read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applies to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 Do not apply to me at all
1 Applied to me to some degree or some of the time
2 Applied to me to a considerable degree or a good part of time
3 Applied to me very much or most of the time

1 (4)	I found it hard to wind down	0	1	2	3
2 (8)	I was aware of symptoms of my condition	0	1	2	3
3 (1)	I couldn't seem to experience any positive feelings at all	0	1	2	3
4 (4)	I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5 (8)	I found it difficult to work up the initiative to do things	0	1	2	3
6 (2)	I tended to over-react to situations	0	1	2	3
7 (4)	I experienced trembling (e.g. in the hands)	0	1	2	3
8 (8)	I felt that I was using a lot of nervous energy	0	1	2	3
9 (2)	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10 (8)	I felt that I had nothing to look forward to	0	1	2	3
11 (4)	I found myself getting agitated	0	1	2	3
12 (4)	I found it difficult to relax	0	1	2	3
13 (8)	I felt down-hearted and blue	0	1	2	3
14 (4)	I was over-conscious of anything that kept me from getting on with what I was doing	0	1	2	3
15 (8)	I felt I was close to panic	0	1	2	3
16 (8)	I was unable to decide whether/whether about anything	0	1	2	3
17 (4)	I felt I wasn't worth much as a person	0	1	2	3
18 (4)	I felt that I was rather lonely	0	1	2	3
19 (4)	I was aware of the action of my heart in the absence of physical exertion (e.g. notice of heart rate increase, heart missing a beat)	0	1	2	3
20 (8)	I felt bothered without any good reason	0	1	2	3
21 (4)	I felt that life was meaningless	0	1	2	3

DASS-21 Scoring Instructions

The DASS-21 should not be used to replace a face-to-face clinical interview. If you are experiencing significant emotional difficulties and would prefer your GP for a referral to a qualified professional.

Depression, Anxiety and Stress Scale - 21 Items (DASS-21)

The Depression, Anxiety and Stress Scale - 21 Items (DASS-21) is a set of three self-report scales designed to measure the emotional states of depression, anxiety and stress.

Each of the three DASS-21 scales contains 7 items, divided into subscales with similar content. The depression scale includes symptoms, hopelessness, desolation of life, self-deprecation, lack of interest/ involvement, anhedonia and inertia. The anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of somatic effects. The stress scale is sensitive to levels of chronic non-specific arousal. It assesses difficulty relaxing, nervous arousal, and being easily upset/ agitated, irritable/ annoyed by the relevant items.

The DASS-21 is based on a dimensional rather than a categorical conception of psychological disorder. The assumption on which the DASS-21 development was based (and which was confirmed by the research) is that the differences between the depressive, anxiety and the stress experienced by normal subjects and clinical populations are essentially differences of degree. The DASS-21 therefore has no direct implications for the allocation of patients to diagnostic categories as outlined in classification systems such as the DSM and ICD.

Recommended cut-off scores for conventional severity (below normal, moderate, severe) are as follows:

Raw scores on the DASS-21 will need to be multiplied by 2 to calculate the final score.

	Depression	Anxiety	Stress
Normal	0-9	0-7	0-14
Mild	10-13	8-9	15-18
Moderate	14-17	10-11	19-21
Severe	18-27	12-18	22-33
Clinical Significance	25+	20+	25+

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- **DASS-21**

Checklist

...MADAM...

...MADAM 1...
...MADAM 2...
...MADAM 3...
...MADAM 4...

...MADAM 1...
...MADAM 2...
...MADAM 3...
...MADAM 4...

...MADAM 1...
...MADAM 2...
...MADAM 3...
...MADAM 4...

	1	2	3	4	5
...MADAM 1... ...MADAM 2... ...MADAM 3... ...MADAM 4...	0	1	2	3	4
...MADAM 1... ...MADAM 2... ...MADAM 3... ...MADAM 4...	0	1	2	3	4
...MADAM 1... ...MADAM 2... ...MADAM 3... ...MADAM 4...	0	1	2	3	4
...MADAM 1... ...MADAM 2... ...MADAM 3... ...MADAM 4...	0	1	2	3	4
...MADAM 1... ...MADAM 2... ...MADAM 3... ...MADAM 4...	0	1	2	3	4
...MADAM 1... ...MADAM 2... ...MADAM 3... ...MADAM 4...	0	1	2	3	4
...MADAM 1... ...MADAM 2... ...MADAM 3... ...MADAM 4...	0	1	2	3	4
...MADAM 1... ...MADAM 2... ...MADAM 3... ...MADAM 4...	0	1	2	3	4
...MADAM 1... ...MADAM 2... ...MADAM 3... ...MADAM 4...	0	1	2	3	4

...MADAM 1...
...MADAM 2...
...MADAM 3...
...MADAM 4...

...MADAM 1...
...MADAM 2...
...MADAM 3...
...MADAM 4...

	1	2	3	4	5
...MADAM 1... ...MADAM 2... ...MADAM 3... ...MADAM 4...	0	1	2	3	4
...MADAM 1... ...MADAM 2... ...MADAM 3... ...MADAM 4...	0	1	2	3	4
...MADAM 1... ...MADAM 2... ...MADAM 3... ...MADAM 4...	0	1	2	3	4
...MADAM 1... ...MADAM 2... ...MADAM 3... ...MADAM 4...	0	1	2	3	4
...MADAM 1... ...MADAM 2... ...MADAM 3... ...MADAM 4...	0	1	2	3	4
...MADAM 1... ...MADAM 2... ...MADAM 3... ...MADAM 4...	0	1	2	3	4
...MADAM 1... ...MADAM 2... ...MADAM 3... ...MADAM 4...	0	1	2	3	4
...MADAM 1... ...MADAM 2... ...MADAM 3... ...MADAM 4...	0	1	2	3	4
...MADAM 1... ...MADAM 2... ...MADAM 3... ...MADAM 4...	0	1	2	3	4

...MADAM 1...
...MADAM 2...
...MADAM 3...
...MADAM 4...

Normal	Normal	Anxiety	Strava
0-5	6-7	8-9	10-11
12-14	15-17	18-20	21-23
24-26	27-29	30-32	33-35

...MADAM 1...
...MADAM 2...
...MADAM 3...
...MADAM 4...

	Tajap
...MADAM 1... ...MADAM 2... ...MADAM 3... ...MADAM 4...	
...MADAM 1... ...MADAM 2... ...MADAM 3... ...MADAM 4...	

• DASS-21 scores

Checklist

Factors identified	MANUAL DASS-21	WEB-BASED DASS-21
Tools		
Human resource		
Staff wages		
Cost of tools		
Cost of electricity		
Cost of photostat		
Time taken to deliver the psychological assessment		

